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Differential Impact of Depressive and Manic Mood States on Alcohol Craving in Comorbid Bipolar Alcoholism: Preliminary Findings

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Abstract

Objectives—To examine the differential impact of depressive and manic mood states on alcohol craving in patients with bipolar disorder and comorbid alcoholism.

Methods—Forty-four men and women, ages 18–65, with DSM-IV-TR comorbid diagnoses of bipolar I disorder and alcohol dependence were assessed over a three-month period to examine the extent to which their depressive and manic symptoms were associated with alcohol cravings (i.e., desire to use and not to use alcohol) at each assessment point, controlling for age, ethnicity, socio-economic status, baseline alcohol use, and number of assessments.

Results—Both manic and depressive symptoms were associated with greater desire to use alcohol. Only depressive symptomatology was associated with reduced desire *not* to use alcohol, and desire not to use alcohol declined over the course of the three-month treatment period.

Conclusion—Whereas enhanced desire to drink alcohol may be a conditioned reaction to both manic and depressed mood states, desire not to drink alcohol may be more of an indicator of treatment motivation, which is negatively affected by depressed mood. Depressive symptoms may warrant prioritization and aggressive targeting early in treatment given that desire to refrain from alcohol use was only influenced by depressive symptoms and declined over the course of treatment.

Keywords

bipolar disorder; alcohol use disorder; craving; mania; depression

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Introduction

Craving, or the pathological desire to seek out and use substances, is a core symptom of alcohol and drug addiction (1, 2). Cravings, which can vary in frequency, duration and intensity, are characterized by psychological distress and physiological reactivity and commonly manifest when experiencing stress/negative affect or when exposed to conditioned drug cues (2–7). Obsessive thinking about drug use, and the craving which accompanies it, can seriously impair functioning and place the addicted individual at risk for continued substance use and relapse (2, 7).

While associations between stress/negative affect and craving are clearly documented, less is known about the differential impact of depressed versus elevated mood states (i.e., mania) on craving responses in individuals with co-morbid bipolar disorder and substance dependence. Epidemiological studies document a strong association between bipolar disorder and alcohol or substance use disorders (8–10). Few prospective controlled studies have examined the relationship between mood states and alcohol craving in patients with bipolar disorder. An eight-week prospective study reported significant correlations between depressive symptoms and alcohol craving and proximal alcohol use (11). Depressive symptoms and alcohol craving also predicted transitioning from a light to a heavy drinking state, or remaining in a heavy drinking state. However, this study did not report on the relationship between mood state and craving. While prior literature highlights an increase in alcohol and drug use during manic states (12, 13), the role of craving in this relationship is not known.

Thus, we examined whether depressive and manic mood states differentially impact the desire to use alcohol in patients with comorbid bipolar disorder and alcoholism. Data for this study was collected as part of a larger clinical trial examining the effects of valproate on alcohol use and mood symptoms in bipolar alcoholics being treated with lithium and psychotherapy (14). We hypothesized that both manic and depressive symptoms would be associated with alcohol craving in this population.

Materials and Methods

Participants and Procedures

The setting of this study was the Center for Psychiatric and Chemical Dependency Services (CPCDS) of the Western Psychiatric Institute and Clinic of the University of Pittsburgh School of Medicine. The CPCDS is a specialized program that treats patients with co-occurring substance use and psychiatric disorders (CODs), within a large urban university-based psychiatric facility. Subjects were selected from adult male and female patients, ages 18–65, who met study inclusion criteria of comorbid alcohol dependence and bipolar disorder. Patients were excluded if they had any cognitive, neurological or unstable medical conditions or were dependent on any substance other than alcohol and nicotine.

Following written informed consent, patients were assessed with the Structured Clinical Interview for DSM-IV (SCID) (15) to confirm comorbid diagnoses of bipolar disorder and alcohol dependence. Baseline assessments also included the Addiction Severity Index (ASI)

(16), the Timeline Followback (TLFB) to assess recent drinking patterns (17), the 17-item Hamilton Rating Scale for Depression (HRSD-17) (18), and the Bech-Rafaelson Mania Scale (BRMS)(19). These latter two rating scales measure the presence and intensity of depressive and manic symptoms.

Alcohol craving was measured using the Modified Quantitative Alcohol Inventory/Craving Scales (MQAI/CS), which was adapted from a cocaine craving questionnaire developed by Weiss et al. (20). The alcohol craving scale has 4-items that assess the severity of cravings on a 9-point scale. The first two questions ask about current desire to use alcohol and current desire not to use alcohol (i.e., “How strong is your desire to use alcohol today? and “How strong is your desire not to use alcohol today?”) which subjects rate on a scale from 0 = “Not at all” to 9 = “Extremely high”. Next, subjects read instructions to “Please imagine yourself in the environment in which you previously used alcohol and/or drugs, e.g., a bar, a party or whatever situation reminds you most strongly of active alcohol/drug use”) and then rated the following two questions on a scale from 0 = “not at all” to 9 = “extremely high”. [“If you were in this environment today, what is the likelihood that you would use alcohol?” and “Please rate how strong your urges are for alcohol when something in the environment reminds you of it (e.g., seeing a beer ad, a wine or liquor ad, a bar sign, something sexual, etc.)]

Forty-four patients, with DSM-IV-TR/SCID co-morbid diagnoses of bipolar I disorder and alcohol dependence, were examined over a three-month period. The sample consisted of 31 (70.5%) males and 13 (29.5%) females. Thirty-two (73%) subjects were Caucasian, and 12 (27%) were African American. Average age of the sample was 37 (sd=10) years. They were predominantly separated, divorced, or single (n=33, 75%), and of low socio-economic status (n=30, 68%). Twenty-eight (64%) were recruited from an inpatient setting and 16 (36%) were recruited from an outpatient setting. Forty (91%) of the subjects reported two or more prior bipolar episodes. The most frequent bipolar subtype on presentation was mixed state (n=25, 56.8%). Subjects reported a history of chronic alcohol use to intoxication with an average of 16 (sd=10) years of use. Most subjects (n =37, 84%) reported more than five years of chronic alcohol use to intoxication. The average number of drinking days to intoxication in the 30 days preceding baseline evaluation was 14.5 (sd=11) days. They reported a baseline alcohol consumption of 91 (sd=105) standard drinks per week. They were also heavy smokers with an average of 130 (sd=129) cigarettes consumed per week. Their level of functioning at baseline was moderately to severely impaired with an average Global Assessment of Functioning Scale score of 39 (sd=13). As expected, the inpatient sample reported higher severity of alcohol use and mood symptoms.

Assessments were performed every two weeks for up to 12 weeks and included the HRSD-17, the BRMS, and the MQAI/CS. The Mixed Model with restricted maximum likelihood procedure and unrestricted covariance matrix was used for data analysis. We examined whether the severity of depressive or manic symptoms was associated with craving for alcohol use at each assessment point, controlling for age, ethnicity, socio-economic status, baseline alcohol use, and number of assessments.

RESULTS

Both manic and depressive symptoms were associated with greater desire to use alcohol (t=2.20, p<.03; and t=2.45, p<.02 respectively) controlling for age, ethnicity, socio-economic status, baseline alcohol use, and number of assessments. (Table 1).

Only depressive, but not manic symptoms, were associated with desire not to use alcohol, (p<.05) controlling for age, ethnicity, socio-economic status, baseline alcohol use, and number of assessments. Other factors associated with craving for alcohol use included outpatient recruitment site (t=2.6, p<.02) and time of assessments, with significant decrease in the desire to refrain from alcohol use over three month period (t= −3.59, p<.003) (Table 2).

DISCUSSION

Our findings suggest that while both manic and depressive symptoms increase bipolar alcoholics' desire to drink alcohol while in treatment, only depressive symptomatology reduces their desire to refrain from alcohol consumption. Whereas enhanced desire to drink alcohol may be a conditioned reaction to both manic and depressed mood states, learned through associative patterns of past alcohol use behavior, desire not to drink alcohol may be more of an indicator of treatment motivation, which is negatively affected by depressed mood. Depression is also known to have a deleterious impact on coping skills, which again may relates to the difficulty in resisting alcohol intake (22). Interestingly, desire not to drink alcohol, a negative correlate of depressed mood, decreased over the course of the three-month treatment period, which may help to explain the poor treatment outcomes seen in this population.

Our findings, while preliminary, are consistent with prior studies demonstrating a relationship between depressive symptomatology and drug craving (5, 21) and add to the literature by demonstrating an association between mood symptoms and craving. Limitations of our study include the small sample size and conduct of a post-hoc analysis using limited number of questions to assess craving rather than a multidimensional measure of craving such as The Alcohol Craving Questionnaire (23).

Nevertheless, our preliminary findings suggest that treatments targeting manic and depressive symptoms may help to reduce alcohol cravings in this population. Moreover, depressive symptoms may warrant prioritization and aggressive targeting early in treatment given that desire to refrain from alcohol use was only influenced by depressive symptoms and declined over the course of treatment.

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Table 1

Manic and Depressive Symptoms Predicting Desire to Use Alcohol among Bipolar Alcoholics

Fixed Effects	**Coefficient**	**SE**
Intercept	1.3494	2.4112
Assessment	0.03760	0.02632
Age	−0.05192	0.03956
Ethnicity	−0.2622	0.8387
Outpatient Sample	2.014*	0.7764
Socioeconomic Status	0.03190	0.02004
Alcohol Use to Intoxication (Past 30 days)	0.01445	0.03148
BR Mania Scale	0.03954*	0.01795
HRS for Depression	0.04527*	0.01846

* p<.05

** p<.01

Table 2

Manic and Depressive Symptoms Predicting Desire NOT to Use Alcohol among Bipolar Alcoholics

Fixed Effects	**Coefficient**	**SE**
Intercept	5.7653*	2.6563
Assessment	−0.08622**	0.02400
Age	0.07710	0.04366
Ethnicity	0.5805	0.9296
Outpatient Sample	−1.6925	0.8769
Socioeconomic Status	−0.02148	0.02200
Alcohol Use to Intoxication (Past 30 days)	−0.04847	0.03535
BR Mania Scale	−0.01817	0.02177
HRS for Depression	−0.05144*	0.02329

* p<.05

** p<.01